

REMARKS/ARGUMENTS

Claims 1-25 are pending in this application. By this Amendment, claims 1, 3 and 10 are amended to correct informalities. No new matter is added. Support for the claims can be found throughout the specification, including the original claims, and the drawings. Withdrawal of the rejections in view of the above amendments and the following remarks is respectfully requested.

The Office Action rejects claims 1-4, 6-8, 19-22 and 24-25 under 35 U.S.C. §103(a) over Irube et al., U.S. Patent Publication No. 2001/0041586 (hereinafter "Irube") in view of U.S. Patent No. 5,672,820 to Rossi et al. (hereinafter "Rossi"), U.S. Patent No. 6,542,824 to Berstis, and U.S. Patent No. 6,535,243 to Tullis. The rejection is respectfully traversed.

Independent claim 1 recites, *inter alia*, a direction sensor configured to detect compass orientation direction data associated with a photographing object, a voice/image communication apparatus configured to multiplex or demultiplex the direction data and at least one of converted voice or image data, and a display module configured to display demultiplexed image and direction data from the voice/image communication apparatus, wherein the direction data is displayed within the image which is captured by the apparatus and displayed by the display module. Independent claim 19 recites, *inter alia*, multiplexing the encoded compass orientation direction data binary value together with image and voice data forming an image frame, and transmitting the image frame to a base station, wherein the image frame includes the compass

orientation direction data as part of the image to be displayed. Irube neither discloses nor suggests such features.

More specifically, as acknowledged by the Examiner in the remarks regarding independent claims 1 and 19, the camera direction sensor unit 28 disclosed by Irube merely senses the presence of a camera unit 4, i.e., whether or not the camera unit 4 is actually attached to the terminal 1 or not. Irube neither discloses nor suggests that the camera direction sensor unit 28 is capable of detecting anything other than the presence of the camera unit 4, let alone detecting data, and specifically any type of compass orientation direction of the camera unit 4 itself, let alone a compass orientation direction of an object being viewed/photographed, which would require additional calculating/correlation capability clearly not disclosed or suggested by Irube. Thus, Irube neither discloses nor suggests a direction sensor configured to detect compass orientation direction data associated with a photographing object, as recited in independent claim 1, nor the corresponding method step(s) recited in independent claim 19.

Further, because the sensor unit 28 is not capable of collecting and providing the recited direction data, Irube necessarily neither discloses nor suggests a voice/image communication apparatus configured to multiplex/demultiplex such data. However, even if the sensor unit 28 were able to provide this type of direction data, the two multiplexer/demultiplexers 17 and 20, which are compared to the voice/image communication apparatus recited in independent claim 1, cannot multiplex/demultiplex voice, video, and direction or other data. That is, Irube clearly

discloses that the multiplexer/demultiplexer 17 has a multimedia communication mode, a voice communication mode, and a data communication mode (see paragraphs 41-44 of Irube), and that the multiplexer/demultiplexer 20 multiplexes and demultiplexes encoded voice data between the codec 23 and the controller 11 (see paragraph 45 of Irube). Thus, even if the sensor unit 28 were capable of supplying direction data, Irube neither discloses nor suggests that either of the multiplexer/demultiplexers 17, 20 are capable of multiplexing/demultiplexing direction data and at least one of converted voice or image data, as recited in independent claim 1, nor the corresponding method steps recited in independent claim 19.

Additionally, Irube neither discloses nor suggests a display module configured to display such multiplexed image and direction data, let alone within the image captured by the apparatus and displayed on the display module, as recited in independent claim 1, nor that an image frame which includes compass orientation direction data is transmitted to a base station for display, as recited in independent claim 19.

Further, Rossi fails to overcome the deficiencies of Irube. Rossi's object location identification system 10 includes an angular measuring system (AMS) 14 connected to a pointing device 16 to measure an orientation of the pointing device 16 and output corresponding heading and depression angle data associated with the device 16/system 14. This heading and depression angle data is sent to a receiving module 12, which generates latitude, longitude and altitude data corresponding to the user's (of the pointing device 16) location. Rossi neither discloses nor

suggests that this simple, coordinate based location data includes compass orientation direction data. Further, this location data is indicative of a location of the pointing device 16 and its user, and not of an object being observed or photographed. Thus, Rossi neither discloses nor suggests a direction sensor configured to detect compass orientation direction data, let alone compass orientation direction data associated with a photographing object, as the direction sensor recited in independent claim 1 and the corresponding method steps recited in independent claim 19. It is further submitted that even a combination of the teachings of Irube and Rossi does not disclose or suggest a direction sensor as recited in independent claim 1.

However, even if such a combination were to suggest such a direction sensor, as asserted in the Office Action, Rossi neither discloses nor suggests that any of the components of the system 10 are configured to multiplex or demultiplex direction data and at least one of converted voice or image data, nor does Rossi disclose or suggest a display module configured to display any such demultiplexed data, as recited in independent claim 1, nor the corresponding method steps recited in independent claim 19.

Still further, Berstis fails to overcome the deficiencies of Irube and Rossi. The portable electronic device 10 disclosed by Berstis uses inertial sensors 16 to sense movement of the device 10 relative to a stored reference position. When an object is photographed and a corresponding image frame is stored, the system may also record a corresponding position of the photographed objective relative to the stored position based on a reading by the inertial sensors

16 and a comparison to the stored reference position. However, this position is not necessarily representative of an actual position of the object itself, and is inaccurate if the device 10 has been moved without storing an updated reference position.

Incorporation of the inertial sensors 16/device 10 disclosed by Berstis with the teachings of Irube and/or Rossi would still not disclose or suggest a direction sensor as recited in independent claim 1. That is, any type of position or direction data collected by the internal sensors 16 and displayed on the device 10 still only reflect a position of the object relative to a current position of the device 10 (see column 6, lines 51-57 of Berstis), i.e., a position of the object relative to the device 10, or a direction in which the device 10 is pointed. Berstis neither discloses nor suggests any correlation/calculation capability which would correlate a direction in which the device 10 is pointed with an orientation directions of an object being photographed. More particularly, Berstis neither discloses nor suggests that position or direction data collected by the sensors reflects an orientation direction of a photographing object (which may include, for example, specific GPS type data) as recited in independent claim 1, nor that any such direction data is multiplexed with at least one of converted voice and image data, as recited in independent claims 1 and 19.

Still further, it is respectfully submitted that Tullis is merely cited as allegedly teaching the use of transceivers and speakers. Thus, Tullis fails to overcome the deficiencies of Irube, Rossi and Berstis.

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Additionally, it is respectfully submitted that there would have been no motivation to combine the Irube, Rossi, Berstis and Tullis references in the manner suggested in the Office Action to arrive at the apparatus as recited in independent claim 1, and the method recited in independent claim 19. Applicant maintains the position that the piecemeal reconstruction of the invention through the combination of four different references, Irube, Rossi, Berstis and Tullis, relies on impermissible hindsight gleaned from Applicant's own disclosure.

Further, Applicant notes that the present application was filed on November 30, 2001, claiming priority to a corresponding application filed in Korea on December 23, 2000. It is respectfully submitted that the claims must be examined based on what was well known in the art at the time of invention. Contrary to what is asserted in the Office Action, it is respectfully submitted that the recited features were not well known in the art at the time of invention, and ths there would have been no motivation to make such a combination.

For at least these reasons, it is respectfully submitted that independent claims 1 and 19 are allowable over the applied combination, and thus the rejection of independent claims 1 and 19 under 35 U.S.C. §103(a) over Irube, Rossi, Berstis and Tullis should be withdrawn. Dependent claims 2-4, 6-8, 20-22 and 24 are allowable at least for the reasons set forth above with respect to independent claims 1 and 19, from which they respectively depend, as well as for their added features.

The Office Action rejects claims 5, 10, and 12-18 under 35 U.S.C. §103(a) over Irube, Rossi, Berstis and Tullis in view of U.S. Patent No. 6,236,940 to Rudow et al. (hereinafter "Rudow"). The rejection is respectfully traversed.

Independent claim 10 recites demultiplexing the image data and separating the image frame into at least one of image, voice, or compass orientation direction data, and displaying the separated image and compass orientation direction data on a screen of a display, wherein the compass orientation data is displayed within the image on the screen of the display. As set forth above, Irube, Rossi, Berstis and Tullis, either alone or in combination, neither disclose nor suggest such features. Further, Rudow fails to overcome the deficiencies of Irube, Rossi, Berstis and Tullis.

More specifically, Rudow is merely cited as allegedly teaching displaying position information to one side of a screen, and thus fails to overcome the deficiencies of Irube, Rossi, Berstis and Tullis. Further, the position of the golf cart and distance to the hole displayed by Rudow's device is displayed adjacent a fixed course map, and outside of the image of the hole shown on the screen. Rudow neither discloses nor suggests displaying any type of direction data, let alone compass orientation data within the image on the display, as recited in independent claim 10.

Additionally, it is respectfully submitted that there would have been no motivation to combine the Irube, Rossi, Berstis, Tullis and Rudow references in the manner suggested in the

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Office Action to arrive at the method as recited in independent claim 10. Applicant maintains the position that the piecemeal reconstruction of the invention through the combination of five different references, Irube, Rossi, Berstis, Tullis and Rudow, relies on impermissible hindsight gleaned from applicant's own disclosure. Applicant further notes that the present application was filed on November 30, 2001, claiming priority to corresponding application filed in Korea on December 23, 2000. It is respectfully submitted that, as set forth above, these features were not well known in the art at the time of invention, contrary to what is asserted in the Office Action, and thus there would have been no motivation for such a combination.

For at least these reasons, it is respectfully submitted that independent claim 10 is allowable over the applied combination, and thus the rejection of independent claim 10 under 35 U.S.C. §103(a) over Irube, Rossi, Berstis, Tullis and Rudow should be withdrawn. Dependent claims 12-18, as well as claim 25, are allowable at least for the reasons set forth above with respect to independent claim 10, from which they respectively depend, as well as for their added features.

Dependent claim 5 is allowable over Irube, Rossi, Berstis and Tullis at least for the reasons set forth above with respect to independent claim 1, from which it depends, as well as for its added features. Further, as set forth above, Rudow fails to overcome the deficiencies of Irube, Rossi, and Berstis. Accordingly, it is respectfully submitted that claim 5 is allowable over

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the applied combination, and thus the rejection of claim 5 under 35 U.S.C. §103(a) over Irube, Rossi, Berstis, Tullis and Rudow should be withdrawn.

The Office Action rejects claims 9, 11 and 23 under 35 U.S.C. §103(a) over Irube, Rossi, Berstis and Tullis in view of U.S. Patent No. 6,516,094 to Takahashi et al. (hereinafter "Takahashi"). The rejection is respectfully traversed.

Dependent claims 9, 11 and 23 are allowable over Irube, Rossi, Berstis and Tullis at least for the reasons set forth above with respect to independent claims 1, 10 and 19, from which they respectively depend, as well as for their added features. Further, Takahashi is merely cited as allegedly teaching the formation of null data, and thus fails to overcome the deficiencies of Irube, Rossi, Berstis and Tullis. Accordingly, it is respectfully submitted that claims 9, 11 and 23 are allowable over the applied combination, and thus the rejection of claims 9, 11 and 23 under 35 U.S.C. §103(a) over Irube, Rossi, Berstis, Tullis and Takahashi should be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

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If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, **JOANNA K. MASON**, at the telephone number listed below.

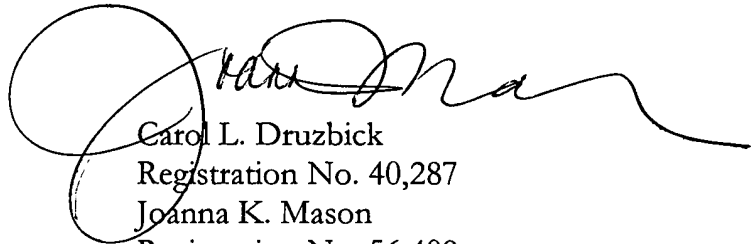
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this,

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concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and
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Respectfully submitted,
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